PATENT ABSTRACTS OF JAPAN

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(54) NETWORK SYSTEM, INFORMATION PROCESSING DEVICE AND METHOD, STORAGE MEDIUM, AND PROGRAM

(57)Abstract:
PROBLEM TO BE SOLVED: To further safely perform communications.
SOLUTION: An external terminal device accesses the connection management server of an authentication service provider in step S81 to provide identification information for authentication service provider. The connection management server makes an authentication server perform an authentication processing to acquire local server information corresponding to the acquired identification information for authentication service provider from an address management server. The connection management server supplies supplying data containing the address information of the log-in screen of a local server, which is generated on the basis of the acquired local server information, to the external terminal device in step S107. The external terminal device accesses the local server

on the basis of the supplying data in step S83.

CLAIMS

[Claim(s)]
[Claim 1] The 1st information processor which is connected to a network and communicates with other information processors, It is the network system which is connected to said network and equipped with the 2nd information processor by the information processor besides the above which manages connection with said 1st information processor. An address selection means to set up the address with which said 1st information processor receives access from an information processor besides the above, The 1st supply means which supplies the information about said address set up by said address selection means to said 2nd information processor, The 1st authentication processing means which attests the 1st identification information supplied from the information processor besides the above which accessed said address, Based on the authentication result by said 1st authentication

processing means, it has the connection control means which controls connection with an information processor besides the above. Said 2nd information processor The 1st acquisition means which acquires the information about said address supplied by said 1st supply means, A storage means to memorize the information about said address acquired by said 1st acquisition means, A connection-request receptionist means to receive the connection request to said 1st information processor supplied by the information processor besides the above, The 2nd acquisition means which acquires the 2nd identification information from the information processor besides the above which is the demand origin of said connection request received by said connection-request reception means, The 2nd authentication processing means which attests said 2nd identification information acquired by said 2nd acquisition means, The network system characterized by equipping the information processor besides the above with which said 2nd identification information was attested by said 2nd authentication processing means with the 2nd supply means which supplies the information about said address memorized by said storage means corresponding to said 2nd identification information.

[Claim 2] An address selection means to connect with a network, to be other 1st information processor and the information processor which communicates, and to set up the address which receives access from said other 1st information processor, An address information supply means to supply the information about said address set up by said address selection means to other 2nd information processor, The information processor characterized by having the authentication processing means which attests identification information supplied from said other 1st information processor which accessed said address, and the connection control means which controls connection with said other 1st information processor based on the authentication result by said authentication processing means.

[Claim 3] Said address selection means is an information processor according to claim 2 characterized by having a basic address setting-out means to set up said basic address, and a connection key setting-out means to perform setting out about said connection key including a basic address including the IP address by which the address which receives said access was assigned to said information processor, and the connection key constituted by the character string of arbitration.

[Claim 4] Said connection key setting-out means is an information processor according to claim 3 characterized by setting up said connection key using the character string of said arbitration inputted by said user based on directions of a user.

[Claim 5] Said connection key setting-out means is equipped with a character string generation means to generate the character string of arbitration. Based on directions of said user, said connection key is updated for every time amount which said user directs using said character string generated by said character string generation means. Said address selection means The information about said address is updated using said connection key updated by

said connection key setting-out means. Said address information supply means The information processor according to claim 3 characterized by supplying the information about said address updated by said address selection means to said other 2nd information processor.

[Claim 6] An authentication key acquisition means to acquire the authentication key supplied to said other 2nd information processor, An authentication key storage means to memorize said authentication key acquired by said authentication key acquisition means, In case it connects with said other 2nd information processor, it has further an authentication key supply means to supply said authentication key memorized by said storage means to said other 2nd information processor. Said authentication key supply means is beforehand acquired by said authentication key acquisition means, and said authentication key memorized by said storage means is supplied to said other 2nd information processor. Said address information supply means is an information processor according to claim 2 characterized by supplying the information about said address to said other 2nd information processor connected based on said authentication key supplied by said authentication key supply means.

[Claim 7] It is the information processor according to claim 2 which is further equipped with an identification information storage means to memorize the identification information of the user who permits connection, and is characterized by said authentication processing means attesting said identification information supplied from said other 1st information processor using said identification information memorized by said identification information storage means.

[Claim 8] The information processor according to claim 2 characterized by having further an initial entry supply means to supply an initial entry including the information about said address to said other 1st information processor.

[Claim 9] The address selection step which is connected to a network, is the information processing approach of other 1st information processor and the information processor which communicates, and sets up the address which receives access from said other 1st information processor, The address information supply control step which controls supply to other 2nd information processor of the information about said address set up by processing of said address selection step, The authentication processing step which attests identification information supplied from said other 1st information processor which accessed said address, The information processing approach characterized by including the connection control step which controls connection with said other 1st information processor based on the authentication result by processing of said authentication processing step.

[Claim 10] The address selection step which is connected to a network, is a program other 1st information processor and for the information processors which communicate, and sets up the address which receives access from said other 1st information processor, The address information supply control step which controls supply to other 2nd information processor of

the information about said address set up by processing of said address selection step, The authentication processing step which attests identification information supplied from said other 1st information processor which accessed said address, The record medium with which the program which the computer characterized by including the connection control step which controls connection with said other 1st information processor based on the authentication result by processing of said authentication processing step can read is recorded.

[Claim 11] It is the program which can perform the computer which is connected to a network and controls other 1st information processor and the information processor which communicates. The address selection step which sets up the address which receives access from said other 1st information processor, The address information supply control step which controls supply to other 2nd information processor of the information about said address set up by processing of said address selection step, The authentication processing step which attests identification information supplied from said other 1st information processor which accessed said address, The program characterized by including the connection control step which controls connection with said other 1st information processor based on the authentication result by processing of said authentication processing step.

[Claim 12] It is the information processor which is connected to a network and manages connection with other 2nd information processor by other 1st information processor. An address information acquisition means to acquire the information about the address supplied from said other 2nd information processor, An address information storage means to memorize the information about said address acquired by said address information acquisition means, A connection-request receptionist means to receive the connection request to said other 2nd information processor supplied by said other 1st information processor, An identification information acquisition means to acquire the identification information supplied from said other 1st information processor which is the demand origin of said connection request received by said connection-request receptionist means, The identification information authentication processing means which attests said identification information acquired by said identification information acquisition means, To said other 1st information processor with which said identification information was attested by said identification information authentication processing means The information processor characterized by having an address information supply means to supply the information about said address memorized by said address information storage means corresponding to said identification information.

[Claim 13] An authentication key generation means to generate an authentication key, and an authentication key supply means to supply said authentication key generated by said authentication key generation means to said other 2nd information processor, An authentication key storage means to relate said authentication key generated by said

authentication key generation means with the information about said other 2nd information processor which supplied said authentication key with said authentication key supply means, and to memorize it, An authentication key acquisition means to acquire said authentication key from said other 2nd information processor, An authentication key authentication means to attest said authentication key acquired by said authentication key acquisition means using said authentication key memorized by said authentication key storage means, Based on the authentication result by said authentication key authentication means, it has further the connection control means which controls connection with said other 2nd information processor. Said address information acquisition means The information processor according to claim 12 characterized by acquiring the information about said address from said other 2nd information processor connected by control by said connection control means.

[Claim 14] It is the information processing approach of an information processor of connecting with a network and managing connection with other 2nd information processor by other 1st information processor. The address information acquisition control step which controls acquisition of the information about the address supplied from said other 2nd information processor, The address information storage control step which controls the output from the storage section of the information about said address with which acquisition was controlled by processing of said address information acquisition control step, The connection-request receptionist step which receives the connection request to said other 2nd information processor supplied by said other 1st information processor, The identification information acquisition control step which controls acquisition of the identification information supplied from said other 1st information processor which is the demand origin of said connection request received by processing of said connection-request receptionist step, The identification information authentication processing step which attests said identification information by which acquisition was controlled by processing of said identification information acquisition control step, Said other 1st information processor with which said identification information was attested by processing of said identification information authentication processing step, The information processing approach characterized by including the address information supply control step which controls supply of the information about said address with which the output from said storage section is controlled by processing of said address information storage control step corresponding to said identification information.

[Claim 15] It is the program for information processors which is connected to a network and manages connection with other 2nd information processor by other 1st information processor. The address information acquisition control step which controls acquisition of the information about the address supplied from said other 2nd information processor, The address information storage control step which controls the output from the storage section of the information about said address with which acquisition was controlled by processing of

said address information acquisition control step, The connection-request receptionist step which receives the connection request to said other 2nd information processor supplied by said other 1st information processor, The identification information acquisition control step which controls acquisition of the identification information supplied from said other 1st information processor which is the demand origin of said connection request received by processing of said connection-request receptionist step, The identification information authentication processing step which attests said identification information by which acquisition was controlled by processing of said identification information acquisition control step, Said other 1st information processor with which said identification information was attested by processing of said identification information authentication processing step, Correspond to said identification information. The record medium with which the program which the computer characterized by including the address information supply control step which controls supply of the information about said address with which the output from said storage section is controlled by processing of said address information storage control step can read is recorded.

[Claim 16] It is the program which can perform the computer which controls the information processor which is connected to a network and manages connection with other 2nd information processor by other 1st information processor. The address information acquisition control step which controls acquisition of the information about the address supplied from said other 2nd information processor, The address information storage control step which controls the output from the storage section of the information about said address with which acquisition was controlled by processing of said address information acquisition control step, The connection-request receptionist step which receives the connection request to said other 2nd information processor supplied by said other 1st information processor, The identification information acquisition control step which controls acquisition of the identification information supplied from said other 1st information processor which is the demand origin of said connection request received by processing of said connection-request receptionist step, The identification information authentication processing step which attests said identification information by which acquisition was controlled by processing of said identification information acquisition control step, Said other 1st information processor with which said identification information was attested by processing of said identification information authentication processing step, The program characterized by including the address information supply control step which controls supply of the information about said address with which the output from said storage section is controlled by processing of said address information storage control step corresponding to said identification information.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to a program at the network system which enabled it to communicate safely more, an information processor and an approach, a record medium, and a list by managing the connection place address for inputting the identification information used for a network system, an information processor and an approach, a record medium, and a list about a program at user authentication.

[0002]

[Description of the Prior Art] Recently, LAN (Local Area Network) represented by the home network also in local-areas, such as domestic, with the formation of always-on connection and broadband-izing of the Internet is spreading. In a home network, the electrical home appliance equipped with communication facility etc. is connected, and information can be shared mutually.

[0003] As an electrical home appliance equipped with communication facility, various things other than a personal computer, such as image image transcription regenerative apparatus, such as a video tape recorder, a television receiver, audio equipment, a lighting device, air-conditioning equipment, or a game machine, exist, for example. Thereby, a user can reserve video or can control burning and putting out lights of lighting by the personal computer.

[0004] Moreover, it becomes possible to communicate also with an external terminal unit like controlling actuation of the electrical home appliance it not only shares information between the devices connected to LAN, but connected to the home network through the Internet by LAN being connected to the network of the exteriors, such as the Internet, from the portable telephone etc. Thereby, even if a user is for example, out, by operating a portable telephone, he can read the mail which the personal computer of a house received, or can perform image transcription reservation of television broadcasting.

[0005] At this time, the respectively global IP address is assigned to the electrical home appliance connected to the home network using IPv6 (Internet Protocol version 6). A portable telephone can communicate with each device through an external network and an external home network using those IP addresses.

[0006] However, if the IP address assigned to the electrical home appliance in this case is known, anyone will be able to access that electrical home appliance from the terminal unit connected to the external network.

[0007] On the other hand, there is a method of performing user authentication to access from an external network, and permitting only access from a specific user by a server etc. In this case, that server performs user authentication by making the user who has accessed from the

outside input identification information, such as ID (IDentification) and a password, using the WEB page described in HTML (HyperText Markup Language) etc., and attesting that identification information based on User Information registered beforehand. That is, a user accesses URL (Uniform Resource Locator) of a WEB page which inputs identification information, and supplies identification information to a server.

[0008]

[Problem(s) to be Solved by the Invention] However, since URL of an access place was being fixed in this case, the technical problem were not desirable occurred on security. For example, since they can try the input of identification information repeatedly if other users who are not permitted know URL of an access place, there is a possibility of permitting an unjust log in. Moreover, when other users who are not permitted receive accessible identification information, other users will be able to perform an unjust log in easily, unless the information registered into the server is updated.

[0009] Moreover, when it carried out that a user has accessible identification information to two or more LANs etc. and two or more connection places existed, the technical problem that it may be difficult to manage all of URL, identification information, etc. of those connection places occurred. For example, since the user in whom two or more connection places exist has to memorize URL and identification information, or has to take a memorandum, has to manage only the number of the connection places and has to use it appropriately, he may require a very complicated activity.

[0010] This invention is made in view of such a situation, and enables it to communicate safely more.

[0011]

[Means for Solving the Problem] The 1st information processor which the network system of this invention is connected to a network, and communicates with other information processors, It is the network system which is connected to a network and equipped with the 2nd information processor by other information processors which manages connection with the 1st information processor. An address selection means to set up the address with which the 1st information processor receives access from other information processors, The 1st supply means which supplies the information about the address set up by the address selection means to the 2nd information processor, The 1st authentication processing means which attests the 1st identification information supplied from other information processors which accessed the address, Based on the authentication result by the 1st authentication processing means, it has the connection control means which controls connection with other information processors. The 2nd information processor The 1st acquisition means which acquires the information about the address supplied by the 1st supply means, A storage means to memorize the information about the address acquired by the 1st acquisition means, A connection-request receptionist means to receive the connection request to the 1st

information processor supplied by other information processors, The 2nd acquisition means which acquires the 2nd identification information from other information processors which are the demand origin of the connection request received by the connection-request reception means, The 2nd authentication processing means which attests the 2nd identification information acquired by the 2nd acquisition means, It is characterized by equipping other information processors with which the 2nd identification information was attested by the 2nd authentication processing means with the 2nd supply means which supplies the information about the address memorized by the storage means corresponding to the 2nd identification information.

[0012] An address selection means to set up the address with which the 1st information processor of this invention receives access from other 1st information processor, An address information supply means to supply the information about the address set up by the address selection means to other 2nd information processor, It is characterized by having the authentication processing means which attests identification information supplied from other 1st information processor which accessed the address, and the connection control means which controls connection with other 1st information processor based on the authentication result by the authentication processing means.

[0013] An address selection means can be equipped with a basic address setting-out means to set up a basic address, and a connection key setting-out means to perform setting out about a connection key, including a basic address including the IP address by which the address which receives said access was assigned to the information processor, and the connection key constituted by the character string of arbitration.

[0014] Said connection key setting-out means can set up a connection key using the character string of the arbitration inputted by the user based on directions of a user.

[0015] Said connection key setting-out means is equipped with a character string generation means to generate the character string of arbitration. Based on directions of a user, a connection key is updated for every time amount which a user directs using the character string generated by the character string generation means. An address selection means Using the connection key updated by the connection key setting-out means, the information about the address is updated and an address information supply means can supply the information about the address updated by the address selection means to other 2nd information processor.

[0016] An authentication key acquisition means to acquire the authentication key supplied to said other 2nd information processor, An authentication key storage means to memorize the authentication key acquired by the authentication key acquisition means, In case it connects with other 2nd information processor, it has further an authentication key supply means to supply the authentication key memorized by the storage means to other 2nd information processor. An authentication key supply means It is beforehand acquired by the

authentication key acquisition means, and the authentication key memorized by the storage means is supplied to other 2nd information processor. An address information supply means The information about the address can be supplied to other 2nd information processor connected based on the authentication key supplied by the authentication key supply means.

[0017] It has further an identification information storage means to memorize the identification information of the user who permits connection, and an authentication processing means can attest identification information supplied from other 1st information processor using the identification information memorized by the identification information storage means.

[0018] It can have further an initial entry supply means to supply an initial entry including the information about said address to other 1st information processor.

[0019] The address selection step which sets up the address with which the 1st information processing approach of this invention receives access from other 1st information processor, The address information supply control step which controls supply to other 2nd information processor of the information about the address set up by processing of an address selection step, It is characterized by including the authentication processing step which attests identification information supplied from other 1st information processor which accessed the address, and the connection control step which controls connection with other 1st information processor based on the authentication result by processing of an authentication processing step.

[0020] The address selection step which sets up the address with which the program of the 1st record medium of this invention receives access from other 1st information processor, The address information supply control step which controls supply to other 2nd information processor of the information about the address set up by processing of an address selection step, It is characterized by including the authentication processing step which attests identification information supplied from other 1st information processor which accessed the address, and the connection control step which controls connection with other 1st information processor based on the authentication result by processing of an authentication processing step.

[0021] The address selection step which sets up the address with which the 1st program of this invention receives access from other 1st information processor, The address information supply control step which controls supply to other 2nd information processor of the information about the address set up by processing of an address selection step, A computer is made to perform the authentication processing step which attests identification information supplied from other 1st information processor which accessed the address, and the connection control step which controls connection with other 1st information processor based on the authentication result by processing of an authentication processing step.

[0022] An address information acquisition means to acquire the information about the

address to which the 2nd information processor of this invention was supplied from other 2nd information processor, An address information storage means to memorize the information about the address acquired by the address information acquisition means, A connection-request receptionist means to receive the connection request to other 2nd information processor supplied by other 1st information processor, An identification information acquisition means to acquire the identification information supplied from other 1st information processor which is the demand origin of the connection request received by the connection-request receptionist means, The identification information authentication processing means which attests identification information acquired by the identification information acquisition means, It is characterized by equipping other 1st information processor with which identification information was attested by the identification information authentication processing means with an address information supply means to supply the information about the address memorized by the address information storage means corresponding to identification information.

[0023] An authentication key generation means to generate an authentication key, and an authentication key supply means to supply the authentication key generated by the authentication key generation means to other 2nd information processor, An authentication key storage means to relate the authentication key generated by the authentication key generation means with the information about other 2nd information processor which supplied the authentication key with the authentication key supply means, and to memorize it, An authentication key acquisition means to acquire an authentication key from other 2nd information processor, and an authentication key authentication means to attest the authentication key acquired by the authentication key acquisition means using the authentication key memorized by the authentication key storage means, Based on the authentication result by the authentication key authentication means, it has further the connection control means which controls connection with other 2nd information processor. An address information acquisition means The information about the address can be acquired from other 2nd information processor connected by control by the connection control means.

[0024] The address information acquisition control step which controls acquisition of the information about the address to which the 2nd information processing approach of this invention was supplied from other 2nd information processor, The address information storage control step which controls the output from the storage section of the information about the address with which acquisition was controlled by processing of an address information acquisition control step, The connection-request receptionist step which receives the connection request to other 2nd information processor supplied by other 1st information processor, The identification information acquisition control step which controls acquisition of the identification information supplied from other 1st information processor which is the demand origin of the connection request received by processing of a connection-request

receptionist step, The identification information authentication processing step which attests identification information by which acquisition was controlled by processing of an identification information acquisition control step, Other 1st information processor with which identification information was attested by processing of an identification information authentication processing step, It is characterized by including the address information supply control step which controls the supply of the information about the address with which the output from the storage section is controlled by processing of an address information storage control step corresponding to identification information.

[0025] The address information acquisition control step which controls acquisition of the information about the address to which the program of the 2nd record medium of this invention was supplied from other 2nd information processor, The address information storage control step which controls the output from the storage section of the information about the address with which acquisition was controlled by processing of an address information acquisition control step, The connection-request receptionist step which receives the connection request to other 2nd information processor supplied by other 1st information processor, The identification information acquisition control step which controls acquisition of the identification information supplied from other 1st information processor which is the demand origin of the connection request received by processing of a connection-request receptionist step, The identification information authentication processing step which attests identification information by which acquisition was controlled by processing of an identification information acquisition control step, Other 1st information processor with which identification information was attested by processing of an identification information authentication processing step, It is characterized by including the address information supply control step which controls the supply of the information about the address with which the output from the storage section is controlled by processing of an address information storage control step corresponding to identification information.

[0026] The address information acquisition control step which controls acquisition of the information about the address to which the 2nd program of this invention was supplied from other 2nd information processor, The address information storage control step which controls the output from the storage section of the information about the address with which acquisition was controlled by processing of an address information acquisition control step, The connection-request receptionist step which receives the connection request to other 2nd information processor supplied by other 1st information processor, The identification information acquisition control step which controls acquisition of the identification information supplied from other 1st information processor which is the demand origin of the connection request received by processing of a connection-request receptionist step, The identification information authentication processing step which attests identification information by which acquisition was controlled by processing of an identification

information acquisition control step, Other 1st information processor with which identification information was attested by processing of an identification information authentication processing step, A computer is made to perform the address information supply control step which controls the supply of the information about the address with which the output from the storage section is controlled by processing of an address information storage control step corresponding to identification information.

[0027] The 1st information processor which is connected to a network in the network system of this invention, and communicates with other information processors, Connect with a network, have the 2nd information processor by other information processors which manages connection with the 1st information processor, and it sets to the 1st information processor. The address which receives access from other information processors is set up. The information about the set-up address is supplied to the 2nd information processor. Authentication of the 1st identification information supplied from other information processors which accessed the address A line crack, Based on the authentication result, connection with other information processors is controlled and it sets to the 2nd information processor. The information about the acquired address is memorized and the 2nd identification information is acquired from other information processors which are the demand origin of the connection request to the 1st information processor from other received information processors. Authentication of the 2nd identification information is performed and the information about the address corresponding to the 2nd identification information is supplied to other attested information processors.

[0028] It sets to the 1st program at the 1st information processor of this invention and an approach, and a list. The address which receives access from other 1st information processor is set up. The information about the set-up address is supplied to other 2nd information processor, authentication of the identification information supplied from other 1st information processor which accessed the address is performed, and connection with other 1st information processor is controlled based on the authentication result.

[0029] It sets to the 2nd program at the 2nd information processor of this invention and an approach, and a list. The information about the address supplied from other 2nd acquired information processor is memorized. The connection request to other 2nd information processor supplied by other 1st information processor is received. The identification information supplied from other 1st information processor which is the demand origin of the connection request is acquired, authentication of the acquired identification information is performed, and the information about the address corresponding to identification information is supplied to other 1st information processor with which identification information was attested.

[0030]

[Embodiment of the Invention] Drawing 1 is drawing showing the example of a configuration

of the network system which applied this invention.

[0031] The local server 11 installed in the local-area 10 represented in a building etc. is connected to LAN12 which is the network in a local-area 10 represented by the home network etc. Moreover, the terminal unit 13 installed in the local-area 10 is also connected to LAN12.

[0032] LAN12 is always connected to the network 21 of the exterior of a local-area 10 represented by a telephone network, the Internet, etc. through the router which is not illustrated.

[0033] The local server 11 controls the other devices currently installed in the terminal unit 13 grade and the local-area 10 through LAN12. Moreover, the local server 11 has the information about the user who permits connection with LAN12 from the outside of a local-area 10, acquires the connection request to LAN12 supplied from the network 21, and performs user authentication.

[0034] The external terminal units 22, such as a personal computer, are connected, in a network 21, the external terminal unit 22 can communicate with the local server 11 through a network 21, and the local server 11 can be controlled or it can control to it the terminal unit 13 connected to LAN12 through the local server 11.

[0035] Moreover, by radiocommunicating with the base station 24 connected to the network 21, it connects with the network 21, and a portable telephone 23 can communicate with the local server 11 through a network 21 like the external terminal unit 22 in this condition, and the local server 11 can be controlled or it can control the terminal unit 13 connected to LAN12 through the local server 11.

[0036] In order that the external terminal unit 22 and a portable telephone 23 may access the local server 11 at this time, it communicates with the connection management server 31 currently installed in the authentication service provider 30 through a network 21.

[0037] The authentication service provider 30 offers user authentication service, and performs authentication processing of a user accessed from the exterior of a local-area 10 to the local server 11.

[0038] It connects with the network 21 and the connection management server 31 currently installed in the authentication service provider 30 processes the connection request to LAN12 from the outside of a local-area 10. For example, the connection management server 31 manages access to the local server 11 from the external terminal unit 22 or a portable telephone 23.

[0039] Moreover, the address administration server 32 currently installed in the authentication service provider 30 manages the information about the local server 11 supplied from the local server 11 through the network 21. Moreover, it connects also with the connection management server 31, and the address administration server 32 can supply the information about the local server 11 to the connection management server 31.

[0040] It connects with the address administration server 32, and the authentication server

33 currently installed in the authentication service provider 30 performs user authentication processing to access to the authentication service provider 30. For example, when the local server 11 accesses the address administration server 32 through a network 21, an authentication server 33 performs authentication processing of the user of the local server 11. Moreover, for example, when the external terminal unit 22 accesses the connection management server 31 through a network 21, an authentication server 33 communicates with the connection management server 31 through the address administration server 32, and performs authentication processing of the user of the external terminal unit 22.

[0041] Since it connects mutually into the authentication service provider 30, required information can be shared, or the connection management server 31, the address administration server 32, and an authentication server 33 can distribute and perform processing.

[0042] Drawing 2 is the block diagram showing the example of a configuration of the local server 11 shown in drawing 1 .

[0043] In drawing 2 , CPU (Central Processing Unit)51 performs various kinds of processings according to the program memorized by ROM (Read Only Memory)52 or the program loaded to RAM (Random Access Memory)53 from the storage section 63. To RAM53, CPU51 performs various kinds of processings upwards again, and required data etc. are memorized suitably. CPU51, ROM52, and RAM53 are mutually connected through the bus 54. The input/output interface 60 is also connected to this bus 54 again.

[0044] The communications department 64 constituted by the storage section 63 constituted with the display which consists of the input section 61 which consists of a keyboard, a mouse, etc., CRT (Cathode Ray Tube), LCD (Liquid Crystal Display), etc., the output section 62 which becomes a list from a loudspeaker etc., a hard disk, etc., the modem, the terminal adopter, or the LAN adapter is connected to the input/output interface 60.

[0045] Data including the information about a user etc., the program for performing various kinds of processings, etc. are memorized by the storage section 63, it is controlled by CPU51, and data and a program are supplied to RAM53.

[0046] The communications department 64 performs the communications processing through LAN12. For example, through a terminal unit 13 and LAN12, it communicates or the communications department 64 communicates through the external external terminal unit 22 and external network 21 of a local-area 10.

[0047] Drive 70 is connected to an input/output interface 60 again if needed, it is suitably equipped with a magnetic disk 71, an optical disk 72, a magneto-optic disk 73, or semiconductor memory 74, and the computer program by which reading appearance was carried out from them is installed in the storage section 63 if needed.

[0048] Drawing 3 is the block diagram showing the example of a configuration of the external terminal unit 22 shown in drawing 1 .

[0049] In drawing 3, CPU101 performs various kinds of processings according to the program memorized by ROM102 or the program loaded to RAM103 from the storage section 113. To RAM103, CPU101 performs various kinds of processings upwards again, and required data etc. are memorized suitably. CPU101, ROM102, and RAM103 are mutually connected through the bus 104. The input/output interface 110 is also connected to this bus 104 again.

[0050] The communications department 114 constituted by the storage section 113 constituted with the output section 112 which consists of the input section 111 and the display which consist of a keyboard, a mouse, etc., a loudspeaker, etc., a hard disk, etc., a modem, the terminal adopter, etc. is connected to the input/output interface 110.

[0051] Data required to log in to the local server 11 of a local-area 10, the program for performing various kinds of processings, etc. are memorized by the storage section 113, it is controlled by CPU111, and data and a program are supplied to RAM113.

[0052] The communications department 114 performs the communications processing through a network 21. For example, the communications department 114 communicates with the connection management server 31 or the local server 11 through a network 21.

[0053] Drive 120 is connected to an input/output interface 110 again if needed, it is suitably equipped with a magnetic disk 121, an optical disk 122, a magneto-optic disk 123, or semiconductor memory 124, and the computer program by which reading appearance was carried out from them is installed in the storage section 113 if needed.

[0054] Drawing 4 is the block diagram showing the example of a configuration of the connection management server 31 shown in drawing 1.

[0055] In drawing 4, CPU151 performs various kinds of processings about management of connection to LAN12 from the outside of a local-area 10 according to the program memorized by ROM152 or the program loaded to RAM153 from the storage section 163. To RAM153, CPU151 performs various kinds of processings upwards again, and required data etc. are memorized suitably. CPU151, ROM152, and RAM153 are mutually connected through the bus 154. The input/output interface 160 is also connected to this bus 154 again.

[0056] The communications department 164 constituted by the storage section 163 constituted with the output section 162 which consists of the input section 161 and the display which consist of a keyboard, a mouse, etc., a loudspeaker, etc., a hard disk, etc., a modem, the terminal adopter, etc. is connected to the input/output interface 160.

[0057] A program, data, etc. for performing various kinds of processings are memorized by the storage section 163, it is controlled by CPU151, and data and a program are supplied to RAM153.

[0058] The communications department 154 performs the external terminal unit 22 and communications processing through a network. Moreover, it connects with the address administration server 32, and the communications department 154 performs the address administration server 32 and communications processing.

[0059] Drive 170 is connected to an input/output interface 160 again if needed, it is suitably equipped with a magnetic disk 171, an optical disk 172, a magneto-optic disk 173, or semiconductor memory 174, and the computer program by which reading appearance was carried out from them is installed in the storage section 163 if needed.

[0060] Drawing 5 is drawing showing the example of a configuration of the address administration server 32 shown in drawing 1 .

[0061] In drawing 5 </A>, CPU201 performs various kinds of processings about the address administration of the local server 11 according to the program memorized by ROM202 or the program loaded to RAM203 from the storage section 213. To RAM203, CPU201 performs various kinds of processings upwards again, and required data etc. are memorized suitably. CPU201, ROM202, and RAM203 are mutually connected through the bus 204. The input/output interface 210 is also connected to this bus 204 again.

[0062] The communications department 214 constituted by the storage section 213 constituted with the output section 212 which consists of the input section 211 and the display which consist of a keyboard, a mouse, etc., a loudspeaker, etc., a hard disk, etc., a modem, the terminal adopter, etc. is connected to the input/output interface 210.

[0063] The communications department 214 performs communications processing with the local server 11 through a network 21. Moreover, it connects with the connection management server 31 and the authentication server 33, and the communications department 214 performs communications processing with them.

[0064] Drive 220 is connected to an input/output interface 210 again if needed, it is suitably equipped with a magnetic disk 221, an optical disk 222, a magneto-optic disk 223, or semiconductor memory 224, and the computer program by which reading appearance was carried out from them is installed in the storage section 213 if needed.

[0065] Next, actuation is explained. In the network system shown in drawing 1 , the user (not shown) of the local server 11 who manages LAN12 is the member of the authentication service provider 30, and presupposes that User Information is registered into the authentication server 33. In addition, a user may be made to be registered automatically at the time of local server 11 purchase or a setup. The user of the local server 11 registered into the authentication server 33 has the identification information for authentication service providers which consists of ID and the password which log in to the connection management server 31 and the address administration server 32.

[0066] It is the member of the authentication service provider 30 as mentioned above, and when the local server 11 is newly installed by the user who has the identification information for authentication service providers or it is initialized, the local server 11 supplies the information about the local server 11 to the address administration server 32, and makes the local server 11 register into it through a network 21.

[0067] The local server information registration processing by the local server 11 shown in

drawing 1 is explained with reference to the flow chart of drawing 6 .

[0068] First, in step S1, CPU51 of the local server 11 performs initialization processing, and generates the local server information which is the information about the local server 11.

[0069] Model information, the information about a corresponding user, address information, the information about a connection key required for access, etc. are included in local server information.

[0070] Model information the information about a user including the information about the model name of the local server 11, a part number, or the engine performance etc. The identification information for authentication service providers used when it connected with the address administration server 32, The address with which address information was assigned to the local server 11 including the information about the already registered user corresponding to the identification information etc. Or the information about a connection key includes a connection key and the information about the setting out including the information on the initial address of a log in screen etc.

[0071] Next, CPU51 controls the communications department 64 and accesses the address administration server 32 using the identification information for authentication service providers. And in step S3, the information about an authentication processing result is acquired from the address administration server 32, and it judges whether it was attested or not. When it judges with having been attested, CPU51 progresses to step S4.

[0072] In step S4, CPU51 supplies local server information to the address administration server 32, and requires the key for servers. The address administration server 32 generates the key for servers, it is a key supplied to the local server 11, and in case the local server 11 logs in to the address administration server 32, it is used.

[0073] The local server 11 will pass the identification information for authentication service providers to a network 32 periodically in that case by connecting with the address administration server 32 periodically, and the local server 11 is not desirable on security so that it may mention later. Therefore, it is made to make for the local server 11 to log in using the identification information for authentication service providers only into 1 time of the beginning. That is, in case the local server 11 re-connects with the address administration server 32 henceforth, the key for servers is used.

[0074] In addition, the key for servers is related with User Information registered into the authentication server 33, and since it is generated and registered, it is valid until the local server 11 is initialized again.

[0075] It stands by until it judges with CPU51 which required the key for servers of the address administration server 32 having progressed to step S5, having judged whether the key for servers was acquired, and having acquired. In addition, when predetermined time amount passes or an error message is acquired, CPU51 ends local server information registration processing.

[0076] When it judges with having acquired the key for servers, CPU51 saves the key for servers which progressed to step S6 and was acquired in the storage section 63, and ends local server information registration processing.

[0077] Moreover, in step S3, when it judges with not being attested, CPU51 ends local server information registration processing.

[0078] Corresponding to the local server information registration processing by the local server 11 explained above, the address administration server 32 performs local server information registration processing.

[0079] The local server information registration processing by the address administration server 32 shown in drawing 1 is explained with reference to the flow chart of drawing 7 .

[0080] It stands by until it judges with whether connection was required from the local server 11, and first CPU201 of the address administration server 32 having been judged and required in step S21.

[0081] Authentication processing is performed based on the identification information for authentication service providers which the local server 11 accessed the address administration server 32 in step S2 of drawing 6 , CPU201 progressed to step S22 when it judged with having required connection, and was acquired. CPU201 controls the communications department 214, supplies the identification information for authentication service providers acquired to the authentication server 33, performs user authentication processing, and acquires a processing result.

[0082] And CPU201 judges whether the identification information for authentication service providers acquired from the local server 11 was attested in step S23. When it judges with having been attested, CPU201 progresses to step S24, permits the connection request of the local server 11, and performs connection processing. At this time, a processing result is supplied to the local server 11. CPU51 of the local server 11 judges whether it was attested or not in step S3 based on the supplied processing result.

[0083] And in step S25 of drawing 7 , it stands by until it judges with CPU201 having judged and acquired whether local server information was acquired from the connected local server 11. In addition, when predetermined time amount passes, a circuit is cut electrically or an error message is acquired, CPU201 ends local server information registration processing.

[0084] In step S4 of drawing 6 , when it judges with having acquired the local server information supplied by the local server 11, CPU201 progresses to step S26, is related with the local server information which generated and acquired the key for servers, and is registered into the storage section 213.

[0085] In addition, the key for servers is related with local server information, and is memorized, and in the user authentication using the key for servers, authentication of the key for servers and authentication of the equipment which supplied the key for servers are performed so that it may mention later. Therefore, the key for servers assigned to the local

server 11 cannot be used from other equipments.

[0086] Generating the key for servers, in step S27, registered CPU201 supplies the key for servers which controlled and generated the communications department 214 to the local server 11, and ends local server information registration processing.

[0087] Moreover, in step S23, when it judges with the authentication server 33 having failed in authentication of the identification information for authentication service providers, CPU201 progresses to step S28, performs error processing, and ends local server information registration processing.

[0088] If the local server 11 is initialized as mentioned above, the local server information which consists of information about the local server 11 will be supplied and registered into the address administration server 32.

[0089] Using the information about the connection key contained in the local server information registered as mentioned above etc., the address of a log in screen is set up so that it may mention later. The information about a connection key is inputted by the user in the local server 11.

[0090] Drawing 8 is drawing in the local server 11 in which a user shows the example of the appearance of a setting-out screen which performs setting out about a connection key.

[0091] In drawing 8 , the setting-out screen 251 is a screen for a user to input setting out about a connection key, and is GUI (Graphical User Interface) which is controlled by CPU51 grade and displayed on the display of the output section 62 etc. Based on this setting-out screen 251, a user operates a keyboard, a mouse, etc. of the input section 61, and inputs setting-out information etc.

[0092] In the setting-out screen 251, various setting out can be performed now by preparing various kinds of tabs, and a user's operating a mouse, and choosing a tab. In drawing 8 , the connection key tab 252 is chosen and setting out about a connection key can be performed now.

[0093] The connection key setting-out column 253 is displayed, and when using [whether a user sets up a connection key and] a connection key, it can set selectively whether the content is changed automatically to the center section of the setting-out screen 251. Moreover, when changing automatically, the time interval can also be set up.

[0094] Moreover, the connection key input column 254 is formed in the connection key setting-out column bottom, and in the connection key setting-out column 253, when being set up so that an automatic change of a connection key may not be made, a user can input a favorite connection key into the connection key input column 254. In drawing 8 , the character string "04C3DAFA07234e3c94ECAC7800681515" is inputted into the connection key input column 254.

[0095] Drawing 9 is drawing in the local server 11 in which a user shows other examples of the appearance of a setting-out screen which performs setting out about a connection key.

[0096] In drawing 9 , the condition tab 261 of the setting-out screen 251 is chosen, and a user can control service about a connection key now.

[0097] In the bottom of the condition tab 261 of the setting-out screen 251, the service control setting-out column 262 which controls service about a connection key is formed. A user operates the input section 61, and service can be started, it can stop or he can reboot it.

[0098] The log in screen URL display column 263 which displays the address information of a log in screen is formed in the service control setting-out column 262 bottom. URL of a log in screen has composition which added the connection key to basic URL. That is, in the case of drawing 9 , URL of a log in screen has composition to which the connection key "04C3DAFA07234e3c94ECAC7800681515" was added, and is displayed on basic URL "http://00.11.222.3/aaa/bbb/ccc?" as "00.11.222.3/[http://] aaa/bbb/ccc?LoginKey=04C3DAFA07234e3c94ECAC7800681515." In addition, in the case of drawing 9 , the usual URL and URL of a SSL (Secure Socket Layer) response are displayed on the log in screen URL display column 263.

[0099] SSL is a protocol which enciphers, transmits and receives information in networks, such as the Internet, and is a protocol for enciphering data used widely now, such as WWW (World Wide Web) and FTP (File Transfer Protocol), and transmitting and receiving the information in connection with privacy, a credit card number, a trade secret, etc. safely. SSL combines security techniques, such as public key encryption, a secret key cryptosystem, a digital certificate, and a Hash Function, and it aims at preventing tapping of data, an alteration, and spoofing. Based on the design policy of the network structure for realizing data communication between different models enacted by International Organization for Standardization, it can use transparent in the transport layer (the 4th layer) especially from the application software using the protocol of high orders, such as HTTP (HyperText Transfer Protocol) and FTP, with the OSI (Open Systems Interconnection) reference model which is a model which divided into the layered structure the communication facility which should have a computer, without being conscious.

[0100] As mentioned above, by setting up so that an automatic change for example, of the connection key may be periodically made by constituting URL of a log in screen, since URL of a log in screen is changed periodically and open Lycium chinense cannot do a log in screen unless it acquires the identification information for authentication service providers even if the 3rd person receives ID and a password, unjust access can be controlled.

[0101] Out of the tab with which the setting-out screen 251 which the user of the local server 11 operates a keyboard, a mouse, etc. of the input section 61, and is displayed on the display of the output section 62 etc. is equipped, as shown in drawing 8 The connection key tab 252 is chosen, and in the connection key setting-out column 253, when changing automatically whether a connection key is automatically changed when using whether a connection key is used, the time interval which makes the change is set up. Moreover, when are not changed

automatically and it sets up, a user inputs a connection key into the connection key input column 254. In addition, the number of alphabetic characters may be restricted, for example, a connection key may be made to be constituted by a character string or a digit string to 32 128-bit characters etc.

[0102] Next, the user whom the input of the setting-out screen 251 shown in drawing 8 completed operates a keyboard, a mouse, etc. of the input section 61, chooses the condition tab 261, and makes service of the set-up connection key start in the service control setting-out column 262. In addition, the address information of the set-up connection key and a log in screen is displayed on the log in screen URL display column.

[0103] As mentioned above, in the local server 11, a connection key is set up by the user and validated. The validated connection key is included in local server information, and is supplied to the address administration server 32.

[0104] Setting out about the above connection keys can be updated by performing same actuation at any time. And when setting out about a connection key is updated, the local server information registered into the address administration server 32 is also updated. This update process is periodically performed by directions of a user or automatic.

[0105] The local server information update process by the local server 11 shown in drawing 1 is explained with reference to the flow chart of drawing 10.

[0106] First, in step S41, CPU51 of the local server 11 adds the updated connection key to address information, and updates the local server information memorized by the storage section 63.

[0107] And in step S42, CPU51 adds the key for servers memorized in the storage section 63 to the updated local server information, controls the communications department 64, and supplies it to the address administration server 32 through a network 21. It stands by until it judges with CPU51 which supplied local server information having progressed to step S43, having judged whether processing result information was acquired from the address administration server 32, and having acquired. In addition, when predetermined time amount passes, CPU51 ends a local server information update process.

[0108] When it judges with having acquired processing result information, based on the processing result information which progressed to step S44 and was acquired, CPU51 displays a processing result on the display of the output section 62 etc., and ends a local server information update process.

[0109] Corresponding to the local server information update process by the local server 11 explained above, the address administration server 32 also performs a local server information update process.

[0110] The local server information update process by the address administration server 32 shown in drawing 1 is explained with reference to the flow chart of drawing 11.

[0111] It stands by until it judges with CPU201 of the address administration server 32

having judged and acquired whether the local server information and the key for servers which the local server 11 supplied in step S42 of drawing 10 were acquired through the network 21 in step S61.

[0112] When it judges with having acquired local server information and the key for servers from the local server 11, CPU201 progresses to step S62, and performs authentication processing for the newly acquired key for servers in the storage section 213 as compared with the registered key for servers. In addition, it may be made to perform authentication of not only authentication of the key for servers but the user authentication from the content of local server information and the local server 11 etc. at this time. Thus, security can be further raised by performing two or more authentications.

[0113] CPU201 which authentication processing ended judges whether the user was attested or not in step S63. And when it judges with having been attested, CPU201 updates the local server information registered into the storage section 213 in step S64 based on the acquired address information.

[0114] And in step S65, CPU201 creates processing result information, supplies it to the local server 11 through a network 21, and ends a local server information update process.

[0115] Moreover, in step S63, when authentication goes wrong and it judges with not being attested, CPU201 progresses to step S65, generates processing result information, supplies it to the local server 11, and ends a local server information update process.

[0116] Since a local server information update process is performed as mentioned above, when it sets up so that a connection key may be changed automatically, it can prevent flowing the identification information for authentication service providers into a network 21 periodically.

[0117] Next, how to connect with the local server 11 through a network 21 from the exterior of a local-area 10 is explained using the connection key set up as mentioned above.

[0118] The case where it logs in to the local server 11 through a network 21 from the external terminal unit 22 is explained with reference to the timing chart of drawing 12 . Moreover, with reference to drawing 13 thru/or drawing 16 , it explains if needed. In addition, the user of the external terminal unit 22 is registered into the local server 11, and has the identification information which consists of ID, a password, etc.

[0119] First, in step S81, CPU101 of the external terminal unit 22 controls the communications department 114, accesses the connection management server 31 of the authentication service provider 30 through a network 21, and supplies the identification information for authentication service providers.

[0120] Drawing 13 is drawing showing the example of the log in screen of the WEB browser displayed on the display of the output section 112, when the external terminal unit 22 accesses the connection management server 31.

[0121] In drawing 13 , the log in carbon button 284 with which the ID input column 282

which inputs ID, the **** WORD input column 283 which enters a password, and a user direct a log in by operating it with the mouse of the input section 111 etc. is displayed on the log in screen 281.

[0122] If a user accesses the predetermined address of the connection management server 31, the connection management server 31 will supply GUI information as shown in <u>drawing 13</u> to the external terminal unit 22 through a network 21. The external terminal unit 22 will display the log in screen 281 as shown in the WEB browser currently displayed on the display at <u>drawing 13</u>, if the GUI information is acquired.

[0123] The user of the external terminal unit 22 enters into the ID input column 282 and the password input column 283 ID and the password which are contained in the identification information for authentication service providers, respectively, and operates a log in carbon button with a mouse etc. CPU101 of the external terminal unit 22 will supply ID and the password which were entered to the connection management server 31 through a network 21, if the log in carbon button 284 is operated by the user.

[0124] CPU151 of the connection management server 31 acquires the supplied identification information for authentication service providers in step S101. And in step S102, CPU151 supplies the identification information for authentication service providers acquired to the authentication server 33, and requires the authentication.

[0125] In step S121, CPU of the authentication server 33 which is not illustrated will perform authentication processing to the identification information in step S122, if the supplied identification information for authentication service providers is acquired. And CPU of an authentication server 33 supplies the authentication result to the connection management server 31 in step S123.

[0126] In step S103, CPU151 of the connection management server 31 controls the communications department 164, and if it acquires the authentication result supplied from the authentication server 33 and it judges that it was attested, it will supply the identification information [finishing / authentication] for authentication service providers to the address administration server 32 in step S104.

[0127] In step S111, if CPU201 of the address administration server 32 controls the communications department 214 and the supplied identification information for attested authentication service providers is acquired, it will retrieve the local server information corresponding to the acquired identification information for authentication service providers registered into the storage section 213 in step S112.

[0128] And in step S113, CPU201 controls the communications department 214 and supplies the retrieved local server information to the connection management server 31. In step S105, CPU151 of the connection management server 31 controls the communications department 164, and acquires the supplied local server information.

[0129] CPU151 of the connection management server 31 which acquired local server

information generates the data for supply for supplying the external terminal unit 22 in step S106 based on the acquired local server information. The address information of the log in screen of the local server 11 corresponding to the identification information for authentication service providers which the external terminal unit 22 supplied is contained in the data for supply. When two or more address information of the log in screen corresponding to identification information exists at this time, two or more address information is contained in the data for supply.

[0130] In step S107, CPU151 of the connection management server 31 which generated the data for supply controls the communications department 164, and supplies the data for supply to the external terminal unit 22 through a network 21.

[0131] In step S82, if CPU101 of the external terminal unit 22 controls the communications department 114 and the data for supply are acquired, it will display the list of the local servers which are connection places as shown in drawing 14 on the WEB browser displayed on the display of the output section 112 based on the data for supply.

[0132] Drawing 14 is drawing showing the example of the local server list screen displayed on the WEB browser.

[0133] In drawing 14 , the local server list display column 292 which displays a list of the personal computer (PC is called hereafter) which is the local server registered into the address administration server 32 corresponding to the user of the external terminal unit 22 is formed in the center of the local server list screen 291. The target PC is chosen from PCs with which the user of the external terminal unit 22 is displayed, and if the access carbon button 293 currently displayed in the local server list display column 292 with the mouse etc. is operated, CPU101 will control the communications department 114 and will access directed PC.

[0134] Moreover, if a user operates with a mouse etc. the updating carbon button 294 prepared in the upper right of the local server list display column 292 of the local server list screen 291, CPU101 will update the information currently displayed on the local server list display column 292, and will display the list information on the newest PC.

[0135] If the detailed information display carbon button 295 is furthermore formed in the local server list display column 292 bottom and a user operates this detailed information display carbon button 295 with a mouse etc., detailed information currently displayed on the local server list display column 292, such as address information of PC and model information, will be displayed, for example. Moreover, registration of PC currently displayed on the local server list display column 292 can also be canceled. If registration of PC is canceled based on GUI as which the user was displayed, the PC will be deleted from the local server list display column 292 of the local server list screen 291.

[0136] Moreover, the SSL release button 296 and the log out carbon button 297 are formed in the upper right portion of the local server list screen 291.

[0137] The external terminal unit 22 connects by using SSL for the local server 11 and usually enciphering information. If a user operates the SSL release button 296 with a mouse etc., the external terminal unit 22 can communicate with the local server 11, without performing encryption by SSL. Since it can communicate by this, without covering the load by the encryption using SSL, even if it is the case which is not high, it can communicate with the local server 11, for example.

[0138] Moreover, if a user operates the log out carbon button 297 with a mouse etc., the external terminal unit 22 will log out of the connection management server 31 connected, and will interrupt the connection processing to the local server 11.

[0139] If the user of return and the external terminal unit 22 chooses as drawing 12 PC connected from the above local server list screens 291 and directs connection to it, CPU101 of the external terminal unit 22 will be accessed in step S83 at the local server 11 based on the data for supply. CPU101 refers to URL to which the connection key of the access place of directed PC was added out of the acquired data for supply, and is accessed at the URL.

[0140] In step S91, CPU51 of the local server 11 accessed through the network 21 from the external terminal unit 22 supplies log in screen data to the external terminal unit 22 through a network 21 in step S92.

[0141] In step S84, CPU101 of the external terminal unit 22 acquires the log in screen data supplied from the local server 11, controls the output section 112, and displays the log in screen acquired on the display etc.

[0142] Drawing 15 is drawing showing the example of the log in screen displayed on the display.

[0143] In drawing 15 , the WEB browser screen 301 is displayed on a display, and the log in screen 302 is displayed on a WEB browser screen. The O.K. carbon button 305 which directs initiation of the processing which supplies the entered user name and the password to the local server 11 because the user name input column 303 which inputs the user name contained in the identification information for local servers which the user of the external terminal unit 22 has in the center of the log in screen 302, the password input column 304 which enters similarly the password contained in the identification information for local servers, and a user operate it with a mouse etc. is formed.

[0144] A user can operate a keyboard or a mouse, can input the user name registered into the local server 11 at the user name input column 303 of the log in screen 302, can enter the password registered at the local server 11 at the password input column 304, and can supply the identification information for local servers to the local server 11 by operating the O.K. carbon button 305.

[0145] If return and a user input the identification information for local servers and direct supply to drawing 12 based on the log in screen 302, in step S85, CPU101 of the external terminal unit 22 will control the communications department 114, and will supply the

inputted identification information for local servers to the local server 11 through a network 21.

[0146] In step S93, CPU51 of the local server 11 controls the communications department 64, acquires the supplied identification information for local servers, and performs authentication processing based on the information about the user memorized by the storage section 63 about the identification information for local servers acquired in step S94. And after authentication processing is completed, CPU51 supplies an authentication processing result to the external terminal unit 22 in step S95. CPU101 of the external terminal unit 22 acquires the supplied authentication processing result in step S86.

[0147] In addition, when URL to which the connection key before the external terminal unit 22 changing was added is accessed for example, after the connection key was changed (URL of a log in screen was changed), the local server 11 supplies an error-processing result to the external terminal unit 22, and refuses connection. Based on the acquired error-processing result, the external terminal unit 22 displays on a display the WEB browser 301 which shows the error screen 310 where the error message "reenter from a my page" was displayed, as shown in drawing 16 .

[0148] By connection processing being performed as mentioned above, in order to access the log in screen of the local server 11 from the exterior, it must connect with the connection management server 31 of the authentication service provider 30, and URL of a log in screen must be acquired. That is, in order to communicate with the local server 11, the identification information for authentication service providers and the identification information for local servers are needed, and a more certainly unjust log in can be controlled.

[0149] Moreover, the user of the local server 11 can make the level of security adjust freely by setting up a connection key in the setting-out screen 251 of drawing 8 . When a connection key is set as an invalid, for example, the external terminal unit 22 If URL of the log in screen of the local server 11 is acquired, can log in to the local server 11 only by the identification information for local servers, and When the connection key of immobilization is set up effectively, the external terminal unit 22 If URL to which it logged in to the local server 11 once, and the connection key of the log in screen of the local server 11 was added is acquired When set as the connection key automatically changed with the time interval which could log in to the local server 11 only by the identification information for local servers, and was decided, the external terminal unit 22 Whenever a connection key is changed, URL of a log in screen must be required of the connection management server 31 of the authentication service provider 30.

[0150] Moreover, since the address administration server 32 of the authentication service provider 30 manages URL of the log in screen of the local server 11 and the information about the local server corresponding to a demand is supplied by the list even if it places, when the log in is permitted to the user of the external terminal unit 22 by two or more local servers,

the external terminal unit 22 does not need to memorize all URL of a log in screen, and is easy address administration.

[0151] In addition, although the processing which the external terminal unit 22 connects above at the local server 11 was explained, it radiocommunicates with the base station 24 connected to the network 21, and when the portable telephone 23 connected to the network 21 connects with the local server 11, the processing is performed similarly.

[0152] Next, the access-control processing performed by the connection management server at this time is explained with reference to the flow chart of drawing 17 .

[0153] It stands by until it judges with first CPU151 of the connection management server 31 being judging whether the communications department's 164 having been controlled and the identification information for authentication service providers having been acquired from the external terminal unit 22, and having judged and required whether connection with the local server 11 was required in step S131.

[0154] The identification information for authentication service providers is acquired, and when it judges with connection with the local server 11 having been required, CPU151 performs authentication processing about the identification information for authentication service providers which progressed to step S132 and was acquired. CPU151 supplies the acquired identification information for authentication service providers to an authentication server 33 as authentication processing, and requires authentication of identification information. And the authentication result supplied from an authentication server 33 is acquired. This processing corresponds to step S102 and step S103 of drawing 12 .

[0155] CPU151 judges whether the identification information for authentication service providers was attested in step S133 based on the acquired authentication result. When it judges with having been attested, in step S134, CPU151 supplies the attested identification information to the address administration server 32, and requires corresponding local server information. This processing corresponds to step S104 of drawing 12 .

[0156] And in step S135, it stands by until it judges with CPU151 having judged and acquired whether the local server information demanded from the address administration server 32 was acquired. In addition, when predetermined time amount passes, or when an error message etc. is acquired, CPU151 ends access-control processing.

[0157] When it judges with having acquired the demanded local server information, CPU151 generates the data for supply based on the local server information progressed and acquired to step S136. This processing corresponds to step S106 of drawing 12 .

[0158] CPU151 which generated the data for supply supplies the data for supply which progressed to step S137 and were generated to the external terminal unit 22 through a network 21, and ends access-control processing. This processing corresponds to step S107 of drawing 12 .

[0159] Moreover, in step S133, when it judges with the identification information for

authentication service providers not being attested based on the acquired authentication result, CPU151 ends access-control processing.

[0160] Based on directions of a user, the external terminal unit 22 connected to the local server 11 as mentioned above can communicate with the local server 11 through a network 21, and can control the terminal unit 13 grade connected to the local server 11 or LAN12 by requiring of the application program with which the local server 11 is equipped.

[0161] Drawing 18 is drawing showing the situation of the application program which the external terminal unit 22 and the local server 11 have. With reference to drawing 18 , the situation of a communication link of the external terminal unit 22 and the local server 11 is explained.

[0162] In drawing 18 , the local server 11 is equipped with the WEB server 321, and this WEB server 321 performs the communication link using HTTP etc., and exchanges various kinds of information, such as an HTML document, and an image, voice, with the external terminal unit 22 through LAN12 and a network 21.

[0163] Moreover, SSL322 which performs encryption which used SSL to the WEB server 321 is in cooperation, and the WEB server 321 enciphers the transmit data transmitted to the external terminal unit 22 using this SSL322, or decodes the received data which were supplied from the external terminal unit 22 and which are enciphered.

[0164] Moreover, the framework 323 for operating various kinds of application programs is formed in the local server 11, the demand information from the external terminal unit 22 supplied through a WEB server is supplied to an application program, or the processing result of an application program is supplied to the external terminal unit 22 through the WEB server 321.

[0165] In drawing 18 , schedule pipe ** program 331C which manages the information about mail client program 331A which performs client processing to the mail server which is not illustrated, and the address, for example, manages the information about the schedule which address manager 331B which cooperates with mail client program 331A, and operates, and a user inputted, application program 331D which is other application programs are carried in the framework 323. The number which what kind of application program may be carried also besides having mentioned above, and is carried can be operated in a framework 323, and it is good for it without limit.

[0166] The WEB contents 324 grade is in cooperation, and a framework 323 is provided with help 332A, image 332B, etc. which the application program carried in the framework 323 or the framework 323 needs. In addition, the WEB contents 324 may be equipped with the contents except having mentioned above.

[0167] The JAVA (trademark) related module 325 is in cooperation to the framework 323, and the JAVA (trademark) related module 325 provides it with the function about the JAVA (trademark) language which the application program carried in the framework 323 and the

framework 323 needs.

[0168] The external terminal unit 22 connected with the local server 11 through LAN12 and the network 21 has the WEB browser 341, performs the communication link using HTTP etc. using the WEB browser 341, and exchanges various kinds of information, such as an HTML document, and an image, voice, with the local server 11. In addition, although a graphic display is omitted, the WEB browser 341 has the SSL function and can perform cryptocommunication using the WEB server 321 and SSL.

[0169] As mentioned above, the local server 11 and the external terminal unit 22 perform the communication link which used HTTP by the WEB server 321 and the WEB browser 341.

[0170] Next, the communications processing by the local server 11 and the external terminal unit 22 is explained with reference to the timing chart of drawing 19 . Here, the case where the external terminal unit 22 controls application program 331D of the local server 11 is explained.

[0171] First, the WEB browser 341 of the external terminal unit 22 supplies demand information directed to the user, such as a screen display and information setting out, to the WEB server 321 of the local server 11 through a network 21 and LAN12 in step S151.

[0172] In step S161, the WEB server 321 will supply the acquired demand information to a framework 323 in step S162, if the demand information supplied from the WEB browser 341 is acquired.

[0173] In step S171, a framework 323 will perform first authentication processing of the user of the external terminal unit 22 which supplied demand information in step S172, if the demand information is acquired. Authentication processing is performed by the connection key used in case for example, demand information is supplied, a user's identification information contained in demand information. And if a user is attested, in step S173, a framework 323 will form acquired demand information into an XML (eXtensible Markup Language) document, and will supply the demand information formed into the XML document in step S174 to corresponding application program 331D.

[0174] Drawing 20 is drawing showing the example of the demand information formed into the XML document by the framework 323.

[0175] In drawing 20 , basic information, such as a version of XML and an encoding method, is constituted from a top by the 1st line. The initial entry which includes the information about the model of connected equipment, the information about the address, etc. in the 3rd line thru/or the 6th line is constituted.

[0176] And the information about the user who has connected which includes the information about the folder to which the file for the users exists in a user's ID and a password, and a list etc. in the 7th line and the 9th line consists of tops. Moreover, the information inputted as a processing demand is constituted by the 8th line. Furthermore, the location where application inputs into the 10th line thru/or the 13th line the matter required of a framework

is indicated by XPath which is the notation used for location specification of an XML document.

[0177] The above demand information supplied to an application program is formed into the XML document, all required information is constituted, and there is especially no limit about DS, such as an item and a line count. Application does not need to prepare the communalized DS which all application programs can read that what is necessary is just to be able to deal with an XML document. That is, also in case an application program is newly added to a framework 323 for example, the DS which the application program to add reads does not need to be as common as the DS which the application program carried previously reads, and versatility is high.

[0178] It follows, for example, data required for the newest application program can add the newest application program by modification of specification etc., without changing a framework, when it differs from the DS which the old application program used.

[0179] The proper required of drawing 19 based on the demand information acquired in step S182 by application program 331D acquiring return and the demand information formed into the XML document as mentioned above in step S181 is processed, and the response indication corresponding to demand information is generated in step S183.

[0180] Application program 331D acquires various information to be used, such as a folder which has the file for users which is making current connection, for example, and the content of a demand, from the demand information which is supplied from a framework 323 and which was formed into the XML document. Since the framework 323 is performing required information analysis about demand information, application program 331D can acquire required information according to the content described by XPath of the demand information formed into the XML document.

[0181] And in step 184, application program 331D supplies the response indication which added the display information in step S185 to a framework 323, after adding the display information about a screen display to the generated response indication.

[0182] Drawing 21 is drawing showing the example of the response indication supplied to a framework 323 from application program 331D.

[0183] In drawing 21 , from a top, since the 1st line thru/or the 9th line are the contents and oscillations which are shown in drawing 20 , the explanation is omitted. As for the 10th line thru/or the 14th line, the demand to a framework 323 is set up, and it is constituted by information setting out of an application proper after the 16th line.

[0184] The response indication outputted from application program 331D is supplied to the terminal unit which is demand information demand-origin through a framework. Therefore, the content and format which are displayed will change with magnitude of the display of the terminal unit, a demand, etc. However, a framework 323 creates the optimal information for the terminal unit which is a requiring agency by editing the response indication supplied

from the application program by application program 331D adding all the information needed to an XML document, without the model of terminal unit which supplied demand information being conscious of especially something, unless it is required.

[0185] The response indication supplied to drawing 19 at return and the above application program 331D is acquired by the framework 323 in step S175. And in step S176, based on the acquired response indication, a framework 323 generates the optimal response indication for an output for the supply origin of demand information, and supplies the generated response indication for an output in step S177. That is, a framework 323 changes XSL (eXtensible Stylesheet Languoage) to be used, and generates a HTML document so that a response indication may be analyzed and it may become the optimal output image configuration according to the class of WEB browser of the supply origin of demand information etc. In addition, while a framework 323 generates a HTML document, it analyzes a response indication and you may make it change CSS (Cascading Style Sheet) to be used according to the class of WEB browser of the supply origin of demand information etc., so that an output image may serve as optimal layout.

[0186] In step S163, the WEB server 163 will supply the acquired response indication for an output to the external terminal unit 22 which is the supply origin of demand information in step S164, if the response indication for an output supplied to the framework 323 is acquired. The external terminal unit 22 acquires the supplied response indication for an output, and is made to display it on a display etc. in step S152.

[0187] The local server 11 and the external terminal unit 22 perform communications processing as mentioned above. Although it explained that the external terminal unit 22 controlled application program 331D of the local server 11 above, if the application program which not only this but the external terminal unit 22 controls is an application program carried in a framework 323, it is good anything. Moreover, also when a portable telephone 23 performs the local server 11 and communications processing, the same processing as the case where it mentions above is performed.

[0188] Next, the application program management processing by the framework 323 performed in this communications processing is explained with reference to the flow chart of drawing 22 .

[0189] It stands by until it judges with the framework 323 having judged and acquired whether demand information was acquired from the WEB server 321 in step S201. And when it judges with having acquired, authentication processing which mentioned the framework 323 above to the demand information progressed and acquired to step S202 judges whether it is the need.

[0190] When it judges with authentication processing being required, a framework 323 performs authentication processing to step S203 to the demand information progressed and acquired. This processing is equivalent to processing of step S172 of drawing 19 . And a

framework 323 progresses to step S204, and it judges whether the user of the supply origin of demand information was attested.

[0191] When it judges with having been attested, a framework 323 progresses to step S205. Moreover, in step S202, when it judges with authentication processing not being required, a framework 323 progresses to step S205.

[0192] In step S205, a framework 323 forms acquired demand information into an XML document, as mentioned above. This processing is equivalent to processing of step S173 of drawing 19 .

[0193] In step S206, when it judges with whether the demand information corresponding to a framework 323 exists, and it judging and existing, the framework 323 which formed demand information into the XML document progresses to step S207, based on demand information, performs required processing and progresses to step S208. In step S206, when it judges with the demand information corresponding to a framework 323 not existing, a framework 323 progresses to step S208 as it is.

[0194] In step S208, when it judges with whether the demand information supplied to an application program exists, and it judging and existing, a framework 323 progresses to step S209, and supplies demand information to a corresponding application program. This processing is equivalent to processing of step S174 of drawing 19 .

[0195] The framework 323 which supplied demand information progresses to step S210. Moreover, in step S208, when it judges with the demand information supplied to an application program not existing, a framework 323 progresses to step S210. In step S210, it stands by until it judges with a framework 323 judging whether the response indication was acquired from the application program which supplied demand information, and not acquiring or supplying demand information.

[0196] When it judges with having acquired the response indication or not supplying demand information, a framework 323 progresses to step S211. Moreover, in step S204, when it judges with a user not having been attested, a framework 323 progresses to step S211.

[0197] In step S211, a framework 323 generates the optimal response indication for an output based on the acquired response indication. This processing is equivalent to processing of step S176 of drawing 19 . The framework 323 which generated the optimal response indication for an output supplies the response indication for an output which progressed to step S212 and was generated to the WEB server 321, and ends application program management processing.

[0198] Communications processing is performed as mentioned above, the external terminal unit 22 controls mail client program 331A of the local server 11, and the processing in the case of referring to the electronic mail which the local server 11 received from the exterior of a local-area 10 is explained with reference to the timing chart of drawing 23 . Suitably with reference to drawing 24 thru/or drawing 26 , it explains if needed.

[0199] First, in step S251, mail client program 331A shown in drawing 18 accesses a mail

server, and still requires the non-received mail which is an electronic mail which has not been received. Based on setting out registered beforehand, this processing is a predetermined time interval and is performed automatically repeatedly.

[0200] In step S241, a mail server supplies the demanded non-received mail to mail client program 331A in step S242, when the demand from mail client program 331A is acquired and there is non-received mail. In step S252, mail client program 331A saves the acquired mail in step S253, if the supplied electronic mail is acquired.

[0201] With directions of a user, in step S231, the external terminal unit 22 which exists in the exterior of a local-area 10 accesses the local server 11 through a network 21, and requires the mail corresponding to a user's account.

[0202] Drawing 24 is drawing showing the example of the mail client top screen displayed on the display of the external terminal unit 22. If the external terminal unit 22 accesses the local server 11 through a network 21, as mentioned above, authentication processing is performed, and the framework 323 of the local server 11 will operate the mail client program 331, and will supply GUI information as shown in drawing 24 to the external terminal unit 22 as a response indication. CPU101 of the external terminal unit 22 displays the GUI information which controlled and acquired the output section 112 on the WEB browser screen 301 currently displayed on the display.

[0203] In drawing 24 , the mail client top screen 351 is displayed on the WEB browser screen 301. The mail client top screen 351 is GUI of a high order most in GUI which mail client program 331A supplies, and is constituted by the carbon button and link which perform various kinds of functions which mail client program 331A offers. That is, by operating the link which constitutes the mail client top screen 351, and a carbon button, the user of the external terminal unit 22 can display the mailbox which displays the list of electronic mails which received, for example, or can display the screen which creates an electronic mail newly.

[0204] The carbon button group which performs various kinds of functions containing the advice / transfer setup-key 353 grade which operates the function to set up the address book carbon button 352 which operates the function of the address book used in case a new electronic mail is created because a user operates it with a mouse etc., the advice of an electronic mail which received a message, and the address of the destination is formed in the upper part of the mail client top screen 351.

[0205] The function selection column 354 as which the list of the functions which mail client program 331A offers is displayed on the left-hand side of the mail client top screen 351 as a link is constituted, and a user can perform various kinds of functions also by directing these links with a mouse etc.

[0206] Moreover, the main menu column 355 which consists of a carbon button group which operates the main functions, and its explanation is formed in the center of the mail client top screen 351. A user can choose the function to make it operate also by operating the carbon

button contained in the main menu column 355 with a mouse etc.

[0207] The user of the external terminal unit 22 directs the demand to mail client program 331A based on the above GUI screens. For example, if a user demands the display of a mailbox, the external terminal unit 22 will supply the demand to mail client program 331A in step S231. This demand is supplied to the local server 11, as mentioned above, processing is performed, and it is supplied to mail client program 331A.

[0208] In step S254, as mentioned above, mail client program 331A which acquired the demand processes a proper, and supplies the information about a saved mail list. In step S232, if the information about the supplied saved mail list is acquired, the external terminal unit 22 will display the acquired saved mail list on a display etc., as shown in drawing 25 .

[0209] Drawing 25 is drawing showing the example of the mailbox screen displayed on the display of the external terminal unit 22.

[0210] The mailbox screen 361 which displays a list of the saved mail supplied to the WEB browser screen 301 currently displayed on the display of the external terminal unit 22 from mail client program 331A of the local server 11 is constituted.

[0211] The reception mail selection column 362 which consists of a list of saved mail is constituted by the mailbox screen 361. The reception mail selection column 362 is constituted by unread or the item which shows the item which shows conditions, such as existing **, the item which shows the existence of an attached file, the item which shows the identifier of the addresser of an electronic mail, the item which shows the subject name of an electronic mail and an arrival-of-the-mail date, or a transmitting date.

[0212] A part or all is constituted by the link among the contents currently displayed on the reception mail selection column 362, and the user of the external terminal unit 22 can display the text of the electronic mail etc. by choosing the subject name of the target electronic mail by operating a mouse etc. from the electronic mails currently displayed on the reception mail selection column 362.

[0213] If the target mail is chosen as drawing 23 from the reception mail selection columns 362 which return and a user show to drawing 25 , in step S233, the external terminal unit 22 will choose the electronic mail directed to the user from the acquired preservation mail lists, and it will require it of mail client program 331A so that the electronic mail may be supplied.

[0214] The demand from the WEB browser 341 of the external terminal unit 22 is supplied to mail client program 331A through the WEB server 321 and a framework 323. Mail client program 331A acquires the demand in step S256. Mail client program 331A which acquired the demand from the external terminal unit 22 performs processing corresponding to a demand, and supplies the demanded electronic mail to the external terminal unit 22 in step S257.

[0215] In step S234, if the external terminal unit 22 acquires the supplied electronic mail, it will be displayed on a display etc.

[0216] Drawing 26 is drawing showing the example of the e-mail display column displayed on the display of the external terminal unit 22.

[0217] In drawing 26 , the e-mail display column 371 which displays the text of an electronic mail etc. is displayed on the WEB browser screen 301. The date of an electronic mail, the addresser, the destination, the multiple address, a subject name, the information about an attached file, etc. are displayed on the e-mail display column 371 besides the text of an electronic mail.

[0218] The user of the external terminal unit 22 can see the content of the electronic mail received in the local server 11 by referring to this e-mail display column 371. Thereby, a user becomes possible [reading the electronic mail which mail client 331A of the local server 11 currently installed in the house received also in a going-out place].

[0219] Although the processing which acquires the electronic mail which mail client program 331A received above in the exterior of a local-area 10 was explained The user of not only this but the external terminal unit 22 Create transmitting mail by the account registered for example, into mail client program 331A by performing processing mentioned above and same processing, or Various functions which mail client program 331A of carrying out classifying reception mail into a folder etc., and arranging, or changing various kinds of setting out about mail client program 331A has are controllable.

[0220] Moreover, when not only this but an electronic mail is received, the purport which mail client program 331A received may be notified automatically, or you may make it transmit the received mail to the external terminal unit 22, although it explained that the external terminal unit 22 accessed the local server 11 based on directions of a user, and the electronic mail which mail client program 331A received beforehand above acquired.

[0221] In that case, the user sets up beforehand so that the electronic mail which mail client program 331A notifies that, or received to the external terminal unit 22 at the time of electronic mail reception may be transmitted. If advice / transfer setup key 353 the user of the external terminal unit 22 indicates the external terminal unit 22 to be to a display etc. with a mouse etc. at drawing 24 is operated, the advice / transfer list display column which performs setting out about advice and a transfer as shown in drawing 27 will be displayed.

[0222] Drawing 27 is drawing showing the advice / transfer list display column currently displayed on the WEB browser screen.

[0223] In drawing 27 , the advice transfer list display column 381 as which the list of setting out about the advice at the time of electronic mail reception or a transfer is displayed is displayed on the WEB browser screen 301 currently displayed on the display.

[0224] It is already set up and the carbon button which deletes in the setting-out information currently displayed on the list is prepared because the additional carbon button 382 which displays on the WEB browser screen 301 GUI which adds setting-out information newly because the user other than the list of the setting-out information about the advice and the

transfer set to the advice / transfer list display column 381 until now operates it with a mouse etc., and a user operate it with a mouse etc.

[0225] By operating the additional carbon button 382 using a mouse etc., the user of the external terminal unit 22 can display on the WEB browser screen 301 the advice and the destination setting-out column which can perform setting out of advice or a transfer as shown in drawing 28 , and can create new setting-out information.

[0226] Drawing 28 is drawing showing the advice and the destination setting-out column currently displayed on the WEB browser screen.

[0227] In drawing 28 , the advice destination setting-out column 391 which can perform setting out about the advice at the time of electronic mail reception or a transfer is displayed on the WEB browser screen 301 currently displayed on the display.

[0228] The data name input column 392 and user as whom a user inputs the identifier of the setting-out information about advice and a transfer using a mouse or a keyboard use a mouse etc. for advice and the destination setting-out column 391. The action selection column 393 and user who choose the content of the processing which this setting-out information directs use a mouse or a keyboard. The comment input column 395 grade into which the advice and the destination address input column 394 which inputs the address of advice or the destination, and a user input the comment about this setting-out information etc. using a mouse or a keyboard is prepared. Moreover, when a user uses and operates a mouse etc. besides this, the additional carbon button which newly registers the inputted setting-out information may be constituted.

[0229] Based on this advice and destination setting-out column 391, the user of the external terminal unit 22 can input the setting-out information about advice or a transfer, and can register it beforehand.

[0230] Processing in case setting out which is made to notify at the time of reception is beforehand performed based on the GUI screen more than it was displayed on the WEB browser screen 301, as shown is explained with reference to the timing chart of drawing 29.

[0231] If non-received mail is required in step S291 like the case where it is shown in drawing 23 , with the time interval as which mail client program 331A was determined beforehand, in step S281, a mail server acquires the demand, and when the non-received mail corresponding to a demand exists, it will supply the non-received mail to mail client program 331A in step S282.

[0232] In step S292, mail client program 331A will generate the advice mail which notifies the new reception mail which carried out income in step S293, if the supplied electronic mail is acquired.

[0233] And in step S294, mail client program 331A supplies the generated advice mail to the external terminal unit 22 through a network 21. In step S271, the external terminal unit 22 acquires the advice mail, and displays the advice mail acquired in the e-mail display column

371 as shown in drawing 26 on the WEB browser 301 currently displayed on the display.

[0234] URL of the access place accessed in case the external terminal unit 22 acquires the reception mail corresponding to advice mail besides the message which tells the purport that mail client program 331A received the electronic mail in the main information about reception mail of the number of cases of reception mail, a subject name, or the addresser and a list may be contained in advice mail which the external terminal unit 22 acquired.

[0235] Moreover, this URL may be a link, and when a user chooses this URL currently displayed on the browser screen 301 using a mouse etc., the external terminal unit 22 accesses selected URL, and you may make it display corresponding reception mail. In this case, if the external terminal unit 22 accesses URL chosen by the user, the e-mail display column 371 as which corresponding reception mail was displayed as shown in drawing 26 will be displayed on the WEB browser screen 301 currently displayed on the display.

[0236] At this time, a connection key which was mentioned above is contained in URL contained in advice mail, and the authentication processing by the authentication service provider 30 shown in drawing 1 can be omitted. Moreover, the identification information for local servers is made to be contained in URL contained in advice mail similarly, and you may make it also omit the authentication processing by the local server 11.

[0237] By making it above, the user of the external terminal unit 22 only chooses the link of URL contained in the acquired advice mail using a mouse etc., can display on a display the mail which mail client program 331A of the local server 11 received, and can peruse it.

[0238] In addition, the authentication service provider 30 needs to be authentication processed for it, and it is good conversely to also make, in case the user of the external terminal unit 22 peruses reception mail conversely, as a connection key is not contained in URL.

[0239] Advice mail is acquired, the external terminal unit 22 displayed on the display etc. accesses the local server 11 in step S272 based on the acquired advice mail, and the mail corresponding to directions of a user is required of mail client program 331A.

[0240] In step S295, mail client program 331A will supply the demanded mail to the external terminal unit 22 in step S296, if the demand is acquired. In step S273, the external terminal unit 22 acquires the supplied electronic mail, and displays the content on a display etc.

[0241] By performing processing as mentioned above, the user of the external terminal unit 22 can peruse the mail which mail client program 331A received from the exterior of a local-area 10.

[0242] Although it explained that the external terminal unit 22 connected above through a network 21 at the local server 11, and mail client program 331A was controlled, if the application program which not only this but the external terminal unit 22 controls is an application program which the local server 11 has, it is good anything like for example, address manager 331B or schedule pipe ** program 331C besides mail client program 331A.

[0243] Drawing 30 is drawing showing the example of the address book top screen displayed on the WEB browser screen 301.

[0244] In drawing 30 , the address book top screen 401 which is a top screen of GUI corresponding to address administration server 331B is displayed on the WEB browser screen 301 displayed on the display.

[0245] When the main menu screen 402 which can display on the address book top screen 401 GUI which controls the main functions of address manager 331B when a user operates it using a mouse etc., and a user choose using a mouse etc., the function-selection column 403 which is the link group on which GUI which controls various kinds of functions belonging to the address book function which address manager 331B offers can be displayed is contained.

[0246] By operating various kinds of carbon buttons or links of this address book top screen 401, a user can open an address book or can edit address information.

[0247] The user of the external terminal unit 22 can be connected to the local server 11 through a network 21 from the exterior of a local-area 10 as mentioned above, various kinds of application programs can be controlled, and, thereby, actuation of the local server 11 and the terminal unit 13 grade connected to LAN12 can be controlled.

[0248] In addition, the application program of the local server 11 with the controllable external terminal unit 22 may be an application program which has what kind of function besides what was mentioned above if the application program which performs distribution, edit, etc. of the application program and image data which perform the image transcription and playback of a television signal, the application program which performs the sound recording and playback of music data are application programs carried in the framework 323 shown in drawing 18 .

[0249] Although it explained that the external terminal unit 22 connected above at the local server 11, and various kinds of application programs were controlled, also when a portable telephone 23 connects with the local server 11 and it controls various kinds of application programs, the same processing as the case where it mentions above is performed.

[0250] Moreover, you may be PDA (Personal Digital Assistance) which has the communication facility other than the external terminal units 22, such as a personal computer mentioned above, and a portable telephone 23 as a terminal unit of the exterior of a local-area 10.

[0251] Although the local server 11 and terminal unit 13 which constitute the network system shown above at drawing 1 , the external terminal unit 22, the portable telephone 23, the connection management server 31, the address administration server 32, and the authentication server 33 explained that it consisted of one set at a time, respectively, they may be constituted by not only this but two or more sets. Moreover, although constituted as another object, as for each server and each equipment which were installed in the authentication service provider 30, the whole service or its part may be unified, respectively.

[0252] In addition, a system expresses above the whole equipment constituted by two or more equipments.

[0253] Although a series of processings mentioned above can also be performed by hardware, they can also be performed with software. When performing a series of processings with software, the program which constitutes the software is installed in a general-purpose personal computer etc. from a network or a record medium possible [performing various kinds of functions] by installing the computer built into the hardware of dedication, or various kinds of programs.

[0254] Apart from the body of equipment, this record medium is distributed in order to provide a user with a program. The magnetic disk with which the program is recorded (a floppy disk is included), an optical disk (CD-ROM (Compact Disk-Read Only Memory) --) DVD (Digital Versatile Disk) is included. It consists of ROMs with which it is not only constituted by the package media which consist of a magneto-optic disk (MD (Mini-Disk) is included) or semiconductor memory, but a user is provided in the condition of having been beforehand included in the body of equipment and on which the program is recorded.

[0255] In addition, in this description, even if the processing serially performed in accordance with the sequence that the step which describes the program recorded on a record medium was indicated is not of course necessarily processed serially, it is a juxtaposition thing also including the processing performed according to an individual.

[0256]
[Effect of the Invention] As mentioned above, according to the network system of this invention, it can communicate safely more.

[0257] According to the program, it can communicate with other information processors safely more at the 1st information processor of this invention and an approach, a record medium, and a list.

[0258] According to the program, the communication link between other information processors is easily manageable in the 2nd information processor of this invention and an approach, a record medium, and a list.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is drawing showing the example of a configuration of the network system which applied this invention.
[Drawing 2] It is the block diagram showing the example of a configuration of a local server shown in drawing 1 .
[Drawing 3] It is the block diagram showing the example of a configuration of the external

terminal unit shown in drawing 1 .

[Drawing 4] It is the block diagram showing the example of a configuration of a connection management server shown in drawing 1 .

[Drawing 5] It is drawing showing the example of a configuration of a address administration server shown in drawing 1 .

[Drawing 6] It is a flow chart explaining the local server information registration processing by the local server shown in drawing 1 .

[Drawing 7] It is a flow chart explaining the local server information registration processing by the address administration server shown in drawing 1 .

[Drawing 8] It is drawing showing the example of the appearance of a setting-out screen which performs setting out about a connection key.

[Drawing 9] It is drawing showing other examples of the appearance of a setting-out screen which performs setting out about a connection key.

[Drawing 10] It is a flow chart explaining the local server information update process by the local server shown in drawing 1 .

[Drawing 11] It is a flow chart explaining the local server information update process by the address administration server shown in drawing 1 .

[Drawing 12] It is a timing chart explaining the processing which logs in to a local server from an external terminal unit.

[Drawing 13] It is drawing showing the example of a log in screen.

[Drawing 14] It is drawing showing the example of a local server list screen.

[Drawing 15] It is drawing showing the example of a log in screen.

[Drawing 16] It is drawing showing the example of an error screen.

[Drawing 17] It is a flow chart explaining the access-control processing by the connection management server.

[Drawing 18] It is drawing showing the situation of an application program.

[Drawing 19] It is a timing chart explaining the communications processing by the local server and the external terminal unit.

[Drawing 20] It is drawing showing the example of the demand information formed into the XML document by the framework.

[Drawing 21] It is drawing showing the example of the response indication supplied to a framework.

[Drawing 22] It is a flow chart explaining the application program management processing by the framework.

[Drawing 23] It is a timing chart explaining the processing in the case of referring to the electronic mail which the local server received from the exterior of a local-area.

[Drawing 24] It is drawing showing the example of a mail client top screen.

[Drawing 25] It is drawing showing the example of a mailbox screen.

[Drawing 26] It is drawing showing the example of the e-mail display column.

[Drawing 27] It is drawing showing the advice / transfer list display column.

[Drawing 28] It is drawing showing advice and the destination setting-out column.

[Drawing 29] It is a timing chart explaining processing in case setting out which is made to notify at the time of reception is performed beforehand.

[Drawing 30] It is drawing showing the example of an address book top screen.

[Description of Notations]

11 Local Server 12 LAN, 13 Terminal unit 21 A network, 22 External terminal unit 23 A portable telephone, 24 Base station 30 authentication service provider, 31 Connection management server 32 Address administration server 33 Authentication server 321 WEB server 322 SSL 323 Framework 324 WEB contents 325 JAVA (trademark) related module 331A Mail client program 331B address manager 331C Schedule pipe ** program 331D Application program